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EXAMINER	
NATNAEL, PAULOS M	

ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/881,892	BRIZ ET AL.	
	Examiner	Art Unit	
	Paulos M. Natnael	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 July 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☒ Claim(s) *19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **1, 7,8,10** and **11** are **again** rejected under 35 U.S.C. 102(e) as being anticipated by Tsujihara et al., U.S. Pat. No. 5,298,985.

Considering claim **1**, a control signal for controlling a means for correction of at least one electron beam that scans a screen line by line, the control signal comprising:

an amplitude of which varies along each screen line according to a first curve of a first type determined by a plurality of line parameters, each of the plurality of line parameters generated to vary from screen line to screen line according to a second curve of the first type determined by a plurality of column parameters, is met by Figs. 7B and 7C, which illustrate the correction waveforms wherein the amplitude v1 and v2 are variable from line to line. (see col. 4, lines 50-55 and col. 6, lines 54-68)

Considering claim **7**, the claimed, a group of horizontal convergence correction coils and a group of vertical convergence correction coils, each group controlled by a control signal of claim 1, is met by the disclosure that "In FIG. 5, a correction waveform of a vertical saw-tooth wave as shown by (1), for example, is supplied to the reference voltage terminal 16 of FIG. 3 so that vertical amplitude correction is implemented when it is applied to the vertical convergence coil or orthogonal correction for vertical lines is implemented when it is applied to the horizontal convergence coil." (col. 6, lines 5-11)

Considering claim **8**, the claimed means for generating at least one electron beam of controllable intensity, the intensity of the electron beam corrected by a control signal of claim 1, is met by the pattern generator 25 (fig.2) and correction waveform generator 27 (fig.2) and/or the control circuit 47 that outputs the horizontal luminance correction waveform, Fig.6.

Considering claim **10**, a method of generating a control signal for correcting at least one electron beam that scans a screen line by line, the method comprising:

a) determining a plurality of column parameters, is met by V1 and V2, Fig.7B

b) generating a plurality of column curves from the respective plurality of column parameters, is met by fig.7B and 7C.

c) generating a plurality of line parameters from each of the plurality of column curves, respectively, is inherent because the parabolic horizontal correction waveform

necessarily comprises line parameters if one were to draw lines across the waveform in horizontal direction.

d) generating a control signal for correcting the location of the electron beam as it scans the screen line by line, the amplitude of the control signal varying along each line according to a plurality of line curves generated from the respective plurality of line parameters, is met by the disclosure that "the control circuits 45-47 ...produce correction waveforms in correspondence to the horizontal amplitude, and consequently a correction waveform with an amplitude V2 as shown in Fig.7C is produced automatically." (Col. 6, lines 64-68)

Considering claim **11**, the method of claim 10 wherein generating the plurality of line parameters comprises varying the line parameters from one line to another according to the plurality of column curves.

See rejection of claim 10;

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims **2-6, 9, 12-18** are **again** rejected under 35 U.S.C. 103(a) as being unpatentable over Tsujihara et al. U.S. Pat. No. 5,298,985 in view of Oh, U.S. Pat. No. 5,694,181.

Considering claim **2**, the control signal of claim 1 wherein each of the first and second curves of the first type comprises the addition of:

a) a constant level, determined by a first parameter, two half Xn curves, where n is any predetermined value, located on either side of the center of the curve, the common origin of the half Xn curves located at the center of the curve and the maximum values of the half Xn curves at the ends of the line determined by a second and a third parameter respectively, is met by the Fig.7B and 7C;

Except for;

b) a double-top curve with a continuous derivative, formed by at least two humps placed end to end and located on either side of the line center, each hump having a null derivative at its top, and each minimum or maximum value of the curve set by a respective distinct parameter.

Regarding b), Tsujihara et al disclose as shown in fig. 4A-4D a variety of correction waveforms. Tsujihara et al. teaches a double top curve waveform for the Horizontal convergence as shown in Fig.5. Furthermore, Tsujihara suggest that "any of the various type of correction shown in Fig.5 can be accomplished." (col. 6. lines 21-22) And the claimed double top curve or similar curves to designate image convergence correction is well known in the art. In this regard, Oh discloses a digital convergence

correcting circuit for digitally correcting a convergence of R,G and B, which includes a memory for storing only seed data, wherein "25 points of seed data for a single screen are set in such manner that 5 points in horizontal direction and 5 points in vertical direction are set..." as shown in Figs. 3,4 and 5B. (see col. 4, lines 12 through col. 6, line 9). In particular, Fig.5B discloses a double top curve having 5 points with various parameters for convergence correction.

Therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of Tsujihara by providing the double top curve convergence correction of Oh, in order to make the system of Tsujihara both more versatile and less costly for the user instead of utilizing another equipment to generate a double top curve correction waveform.

Considering claim **3**, the control signal of claim 2 wherein the double-top curve has a zero value and a null derivative at its center, is met by the parameter P2(x2,w2) which has a zero value in the x,y,z coordinate system. (See also rejection of claim 2 (b))

Considering claim **4**, the control signal of claim 2 wherein the double-top curve has a zero value and a null derivative at its ends, is inherent because the ends of the curve (Fig. 5B) are illustrated to curve towards the zero value if the interpolation were needed to be taken (or to continue) in that direction. (See also rejection of claim 2 (b))

Considering claim **5**, the control signal of claim 1, determined, for each line, by five line parameters.

Regarding claim 5, while Tsujihara et al. do not specifically disclose a five line parameters, it would have been an obvious matter of design choice to have only five line parameters, since such modification would have involved a mere change in the number of line parameters.

Considering claim **6,** the control signal of claim 1 wherein each line parameter varies according to the second curve determined by five column parameters.

Regarding claim 6, see rejection of claims 1 and 5.

Considering claim **9**, a circuit for generating a control signal of claim 1, comprising: a first calculator adapted to generating the control signal based on a predetermined number of line parameters, synchronized with a screen line scanning signal, and at least one second calculator adapted to generating the line parameters of each line of the screen based on a predetermined number of column parameters, synchronized with a vertical screen scanning signal,

Regarding claim **9**, Tsujihara et al. disclose the computation processor 48 (fig.8) and correction signal generator 27. However, Tsujihara et al. do not disclose the detailed circuitry of the correction signal generator 27, which receives a sync signal 20 and generates the control signals therefrom. The sync signal comprises horizontal and vertical sync components as is well known in the art. Therefore, it would have been

obvious to the skilled in the art at the time the invention was made to modify the system of Tsujihara by providing separate calculators for the horizontal and vertical scanning signals in order to generate a control signal for each, so that the horizontal and vertical control signals are utilized separately for generating the line parameters accordingly.

Considering claim **12**, the method of claim 10, wherein generating the plurality of column curves and the plurality of line curves comprises: adding together the following curves:

a) a constant level curve determined by a first line parameter of the plurality of line parameters; two half X" curves, joined together at a common origin forming a center with the maximum values of each half X" curve at the ends of the joined curves determined by a second and a third parameter, respectively, where n is a predetermined value, is met by the Fig.7B and 7C;

Except for;

b) a double-top curve having a continuous derivative and formed by at least two humps placed end to end and located on either side of a center of the double-top curve, each hump having a null derivative at its top and each minimum or maximum value of the double-top curve set by a respective distinct parameter.

See rejection of claim 2(b);

Considering claim **13**, the method of claim 12, comprising generating the double-top curve to have a zero value and a null derivative at its center.

See rejection of claim 3;

Considering claim **14**, the method of claim 12, comprising generating the double-top curve to have a zero value and a null derivative at its ends.

See rejection of claim 4;

Considering claim **15**, the method of claim 10 wherein the plurality of column parameters comprises five column parameters for each line, and the plurality of line parameters comprises five line parameters for each line.

See rejection of claim 5.

Considering claim **16**, a device for adjusting the convergence of three parallel electronic beams that scan a screen line by line, the device comprising:

a) a group of horizontal convergence correction coils and a group of vertical convergence correction coils, is met convergence coils, fig.5; (see also figs. 2,9,13)

b) a circuit for generating a control signal to the group of horizontal convergence correction coils and a group of vertical convergence corrections coils, is met by the correction waveform generator 27, figs. 2 and control circuits 45-47, fig.6;

Except for;

c) a first calculator adapted for generating a control signal based on five line parameters synchronized with a screen line scanning signal;

d) at least one second calculator adapted to generate the line parameters of each line of the screen based on a predetermined number of column parameters synchronized with a vertical screen scanning signal.

Regarding c) and d), see rejection of claim 9.

Considering claim **17**, the device of claim 16 wherein the control signal generating circuit is configured to generate a control signal for each electron beam, the control signal having an amplitude that varies along each line according to a first curve of a first type determined by a plurality of line parameters, each of the plurality of line parameters generated according to a second curve of the first type determined by column parameters.

See rejection of claims 12 (b) and 16.

Considering claim **18**, the device of claim 17 wherein the first curve is determined by five line parameters and the second curve is determined by five column parameters.

See rejection of claim 5;

Response to Arguments

5. Applicant's arguments filed 7-02-04 have been fully considered but they are not persuasive. Response follows:

Applicant's Arguments

a) As previously explained in the response to the first Office Action, Tsujihara et al., U.S. Patent No. 5,298,985, is directed to a control method for an image correction apparatus in which display areas are being varied." As Tsujihara et al. teach at column 6, lines 28-69, the correction of horizontal deflection amplitude via the horizontal convergence coil for a screen having an aspect ratio of 16:9 will not work when the aspect ratio or display area of the screen is changed to 1:1. As Tsujihara et al. explains at column 6, lines 59-61. "The spatial correction value on the screen is so large that there arise changes in the conversion, focus and Luminance."

b) Nowhere does Tsujihara et al. teach or suggest varying the amplitude from V1 So V2 on a line-by-line basis. Rather, the amplitude of the correction waveform remains the same for each screen line. The amplitude changes not screen line by screen line but only in response to a change in the aspect ratio the size of the display area of the screen. Moreover, Figure 7B clearly shows how the value V2 is determined: The value V2 is equal to the value given to the correction waveform when, on a screen with a16:9 aspect ratio, the spot of the screen is in the position corresponding to the end of a line for a screen with a 1:1 aspect ratio. V1 and V2 are .two values of the same variable (the amplitude of the correction waveform), and the variable is changed only when the aspect ratio of the screen changes.

c) In remarks accompanying the rejection, the Examiner states that "The

amplitudes of V1 and V2 varies along an imaginary straight line which can be determined by drawing a plurality of the lines to obtain a given parameter for each line, each of the plurality of the line parameters inherently varies from line to line as one follows the curve up or down." In light of applicants' foregoing explanation of the teaching of Tsujihara et al., one would understand that a variation from V1 to V2 of the amplitude of the horizontal deflection along an imaginary straight line, which can be determined by drawing a plurality of lines would only be of some use if the aspect ratio of the screen changed from line to line. Tsujihara et al. don't teach or suggest such a "line-to-linen variation of a parameter as set forth in claim 1.

d) Claims 1, 10, and 16 have each been amended to recite the first curve of a first type determined by a plurality of lines parameters, each of the plurality of line parameters generated to vary from screen line to screen line according to a second curve of the first type determined by a plurality of column parameters. In other words, each of the independent claims recite the line parameters varying from screen line to screen line, thus clearly distinguishing the present invention over the teaching of Tsujihara et al. Claim 7, which is directed to a device for adjusting the convergence of three parallel electron beams utilizes a control signal generated as set forth in claim 1. In view of the discussion above with respect to Tsujihara et al., applicants respectfully submit that claims 1, 7, 8,10, and 11 are clearly allowable over Tsujihara et al. because this reference fails to teach a control signal generated by a plurality of line parameters that

vary from screen line to screen line according to a second curve that is determined by a plurality of column parameters.

Examiner's Response

a) Tsujihara et al disclose image correction apparatus for adjusting images by digitally controlling analog correction waveforms. Tsujihara et al. discloses that "the sync signal is also supplied to the correction waveform generator 27, by which an analog correction waveform (parabolic waveform, saw-tooth waveform, etc.) in each scanning direction is produced and applied to the reference voltage input terminal of the multiplying D/A converter 26. The memory 23 stores various correction data in accordance with the address signal from the address generator 22. Digital data read out of the memory 23 is supplied to the data input terminal of the multiplying D/A converter 26." Besides, contrary to applicant's assertion, the claims do not specify an aspect ratio of 16:9, 4:4 or 1:1.

b) As Applicant admits, obviously the correct waveform of fig. 7 can be varied for 16:9, 4:3 to 1:1, as shown above in Fig.7B-C. It is variable as desired line-by line; it can be varied for any desired size of screen, because as mentioned before, the first curve P1, as defined in the specification (page 8), is a line and not a curve, thus, has a constant level and does not vary. Nevertheless as shown in Fig.7B (Tsujihara et al) the amplitudes of V1 and V2 varies along an imaginary straight line which can be determined by drawing a plurality of the lines to obtain a given parameter for each line,

each of the plurality of the line parameters inherently varies from line to line as one follows the curve up or down. Thus, the argument that Tsujihara et al. does not teach or suggest varying a first curve by a plurality of line parameters that are in turn generated to vary from line to line...is unpersuasive.

c) See part A above.

d) See part A above.

Allowable Subject Matter

6. Claim **19** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to disclose a device for adjusting the convergence of three parallel electronic beams that scan a screen line by line, comprising: wherein the control signal generating circuit is configured to generate each of the first and second curves of the first type by adding a first curve of the second type of a constant level determined by the first line parameter, a second curve of the second type comprising two half X" curves joined together at a common origin to form a center of the second curve of the second type, the common origin of each half X" curve located at the center of the second curve of the second type, and the maximum values of the half X° curves at the ends of the second curve of the second type determined by second and third

parameters, respectively, a third curve of the second type comprising a double-top curve with a continuous derivative formed by at least two humps placed end to end and located on either side of a center point of the third curve of the second type, each hump having a null derivative at its top and each minimum or maximum value of the double-top curve set by a respective distinct parameter, as in claim **19**.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (703) 305-0019. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PMN
December 22, 2004

PAULOS M. NATNAEL
PATENT EXAMINER